

BRAZING FURNACE REQUIREMENTS

As of this date an analysis of the brazed panel requirement on our article requires the need of an additional furnace in our facility. The reasons for an additional furnace are as follows:

1. The type of construction i.e., all stainless steel brazed panels, greatly overloads the existing capacity.

Our analysis shows that we will require approximately 260 brazed panels for our article for an estimated 2,235 square feet. The numbers indicated do not account for special control specimens within the lot or the attrition due to rejections. The number of brazed panels to be completed per month will range from the 260 to approximately 520 per month, again excluding those which would be required for attrition and heat temperature survey samples (control samples).

An additional furnace of the type that we recommend will give us a capacity of 550 brazed panels per month. The existing furnace now on hand, used on the B-58 program, has a maximum capacity of 250 brazed panels per month. Therefore, this furnace has the capacity to take care of the B-58 production program up to the rate of 3.8 B-58's per month.

2. The processing, using the new type materials and bonding alloys, exceeds the existing temperature range of the present furnace in temperatures.

The existing brazing furnace is tuned to a production B-58 program and as such was procured many years ago to take care of the conditions that were known at that particular time in the brazing state of art science. Our article pushes this state of the art in that the temperatures of our brazed panels must be able to take increased temperatures. As such, the normal cycle which is accomplished at 1650° needs to be increased to a two-stage capacity. The first stage with improved brazing alloy and 15-7 material will require 1800-1900° temperatures, and the next stage, a new brazing alloy with the nickel based materials, such as Rene 41, will require 1900 to 2000° temperatures. The existing furnace cannot be "steamed up" to take care of the higher temperature ranges due to the limits of existing design on the present furnace.

The new brazing furnace should have the capacity not only of brazing but also the capacity for heat treating and aging these new materials. This processing also exceeds present capacity of both temperature and the acceleration of temperature.

It is also preferred to have this furnace a vertical type due to the thin sections having high slenderness ratios of 20 to 1, reducing the warpage and reducing the cost by eliminating heat treat fixtures.

In summation, two critical factors: The lack of capacity and the new processing not compatible to the B-58 are the prime motives for requesting a new furnace for our program. There will be other substantial benefits such as assuring schedule delivery, reduced cost, and the flexibility in being able to do heat treating as well as brazing in this furnace.

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VD/fp

\$ 290,000 — 6 months from July 1, 1959
 High Priority request for controls mfg.
 \$ 202,000 Halden Furnace (Seeds & mottos)
 \$ 10,000 Install
 \$ 78,000 Refrigeration equipment

July 1

